

DRAFT

PROJECT MANAGEMENT PLAN

for the

**Upper Mississippi River Comprehensive Plan
For Systemic Flood Damage Reduction and
Associated Environmental Sustainability**

An Enhanced Reconnaissance Study



**Prepared by the
U.S. Army Corps of Engineers
Rock Island, St. Louis, and St. Paul Districts**

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Acronyms

| | |
|---------|---|
| AFB | Alternative Formulation Briefing |
| CEFMS | Corps of Engineers Financial Management System |
| CEMVD | Mississippi Valley Division (Corps of Engineers) |
| CEMVP | St. Paul District (Corps of Engineers) |
| CEMVR | Rock Island District (Corps of Engineers) |
| CEMVS | St. Louis District (Corps of Engineers) |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act |
| CT | Collaboration Team |
| DNR | Department of Natural Resources |
| EA | Environmental Assessment |
| ECC | Economics Coordinating Committee |
| EIS | Environmental Impact Statement |
| EMP | Environmental Management Program (see also UMRS-EMP) |
| EMPCC | Environmental Management Program Coordinating Committee |
| EPA | Environmental Protection Agency |
| ER | Engineering Regulation |
| ESA | Endangered Species Act |
| E.O. | Executive Order |
| EOP | Environmental Operating Principles |
| EQ | Environmental Quality |
| FDR | Flood Damage Reduction |
| FEMA | Federal Emergency Management Agency |
| FFS | Flow Frequency Study |
| FSM | Feasibility Scoping Meeting |
| FY | Fiscal Year (Federal FY runs 1 October – 30 September) |
| GI | General Investigations |
| GIS | Geographic Information Systems |
| HEC | Hydrologic Engineering Center |
| HMA | Habitat Measures Assessment |
| HQSACE | Headquarters, U.S. Army Corps of Engineers |
| IDNR | Illinois Department of Natural Resources |
| ITR | Independent Technical Review |
| IWR | Institute for Water Resources |
| IWW | Illinois Waterway |
| LERRD | Lands, Easements, Rights-of-Way, Relocations and Disposal |
| LSA | Landform Sediment Assemblage |
| MIPR | Military Interdepartmental Purchase Request |
| MO SEMA | Missouri State Emergency Management Agency |
| MRBA | Mississippi River Basin Alliance |
| MR&T | Mississippi River and Tributaries |
| NAS | Network Analysis System |
| NECC | Navigation Environmental Coordination Committee |

Acronyms (continued)

| | |
|----------|---|
| NED | National Economic Development |
| NEPA | National Environmental Policy Act |
| NER | National Ecosystem Restoration |
| NRCS | Natural Resources Conservation Service |
| OSE | Other Social Effects |
| PCA | Project Cooperation Agreement |
| PDF | Project Design Flood |
| PDT | Product Delivery Team |
| PI | Public Involvement |
| PMP | Project Management Plan |
| PRB | Project Review Board |
| PROMIS | Project Management Information System |
| QCP | Quality Control Plan |
| QCT | Quality Control Team |
| RC&D | Resource Conservation and Development |
| RED | Regional Economic Development |
| REP | Real Estate Plan |
| RFG | Regional Focus Group |
| ROD | Record of Decision |
| RPM | Regional Project Manager |
| SACCR | Schedule and Cost Change Request |
| SOW | Scope of Work |
| SM | Study Manager |
| SPF | Standard Project Flood |
| UMIMRA | Upper Mississippi, Illinois and Missouri River Association |
| UMRBA | Upper Mississippi River Basin Association |
| UMRCC | Upper Mississippi River Conservation Committee |
| UMRCP | Upper Mississippi River Comprehensive Plan |
| UMRS-EMP | Upper Mississippi River System – Environmental Management Program |
| USACE | U.S. Army Corps of Engineers |
| USEPA | U.S. Environmental Protection Agency |
| USDA | U.S. Department of Agriculture |
| USFWS | U.S. Fish and Wildlife Service |
| USGS | U.S. Geological Survey |
| WBS | Work Breakdown Structure |
| WRDA | Water Resources Development Act |

1.0 The Project Management Plan (PMP) and the Planning Process

1.1 The Project Management Plan

This Project Management Plan (PMP) for the Upper Mississippi River Comprehensive Plan (UMRCP) was prepared in accordance with U.S. Army Corps of Engineers guidance contained in Engineering Regulation (ER) 1105-2-100 (Planning Guidance Notebook). The Rock Island, St. Louis, and St. Paul Districts of the U.S. Army Corps of Engineers jointly developed the PMP. Additionally, external review and input were pursued.

The PMP documents the study scope, tasks, schedule, budget, and responsibilities. It lays out the actions to be taken to assure proper levels of study collaboration, coordination, and communication throughout the duration of the study with other Federal agencies, the five basin states (IA, IL, MN, MO, WI), local government (counties and municipalities), interested non-governmental organizations, and the general public.

The purpose of this PMP is to present a plan of study that meets the requirements of Section 459 of the 1999 Water Resources Development Act (WRDA), as amended (see report pages 3 and 4). The primary study requirements are the identification of a recommended systemic plan for flood damage reduction (FDR) and a companion Report to Congress. In addition, consistent with study authority and subsequent guidance, the study will consider how floodplain habitat needs, recreation expectations, and other aspects of a floodplain “desired future condition” could be concurrently met. Specific comprehensive plan components to be addressed include: the scoping for the development of a Standard Project Flood (SPF) definition; the investigation of a flood management plan for the existing condition; and the development and evaluation of 3 to 5 alternative plans for systemic flood damage reduction and associated environmental sustainability.

The Comprehensive Plan will be prepared for submission to Congress by the Secretary of the Army for approval as a framework for implementation of a systemic flood damage reduction and associated water resources project. The Comprehensive Plan will contain component projects that make up the systemic plan. Component projects that are recommended in the plan and are advanced to the level of detail for a favorable report of the Chief of Engineers may be authorized by Congress. Other critical projects may be identified in the plan for authorization subject to approval of project implementation reports by the Secretary of the Army and resolutions of approval by the U.S. Senate Committee on Transportation and Infrastructure and the U.S. House Committee on Environment and Public Works. Remaining component projects of the systemic plan would require specific Congressional authorization following completion of follow-on feasibility reports approved by the Secretary of the Army.

This PMP is based upon a study completion date of July 2004 (4th quarter; FY 04) with submission of the recommended plan and Report to Congress in December 2004 and a total uninflated project cost estimate of \$4.84 million.

The PMP is intended to be a dynamic document. It will be revised as necessary throughout the duration of the study.

1.2 The Planning Process

The study will be accomplished utilizing a structured approach to problem solving. The six-step planning process commonly used in water resources development studies conducted by Federal agencies will be employed. The steps are:

- Step 1 - Identifying problems, needs, and opportunities
- Step 2 - Inventorying and forecasting conditions
- Step 3 - Formulating alternative plans
- Step 4 - Evaluating alternative plans
- Step 5 - Comparing alternative plans
- Step 6 - Selecting a plan

The Corps' interdisciplinary Product Delivery Team (PDT) will carry out the planning process in close collaboration and coordination with a Collaboration Team (CT) and four Regional Focus Groups (RFGs). The CT and RFGs will be established early in the study process (see Section 4.0 for additional information). Broad public participation also will be pursued to gain additional information and insights and ultimately develop a recommended plan that enjoys the widest possible support.

Each alternative will be evaluated for completeness, effectiveness, efficiency, and acceptability. Alternative plans will be compared based upon both economic feasibility and cost effectiveness. In addition, some trade-off analysis is expected to be applied. Trade-off analysis supports the comparison of different effects expressed in different measurement units.

The Corps "System of Accounts" will be utilized to organize and track the effects of alternative plans. The accounts, as established by the Corps' Principles and Guidelines, include national economic development (NED), regional economic development (RED), environmental quality (EQ), and other social effects (OSE).

2.0 Study Background

2.1 Introduction

The “Flood of ‘93” resulted in significant losses of life, property, crops, and natural resources throughout the Upper Mississippi River basin. Since that disastrous event, several more major floods, affecting various reaches of the system, have occurred. The economic, social, and environmental impacts of these events show a the need to evaluate potential solutions and to develop a systemic and comprehensive flood damage reduction plan in association with environmental sustainability.

Many studies and system-level coordination efforts intended to address various floodplain issues have been pursued since the Flood of ’93. Although these efforts have individually and collectively added to our understanding of floodplain problems, needs, opportunities, functions, and options for addressing flood damage reduction, floodplain habitat restoration, and other aspects of a “desired future condition” for the floodplain, none have produced a truly systemic comprehensive floodplain plan.

The UMRCPP will be accomplished at a level of effort consistent with the Corps’ traditional reconnaissance study. This level of study, herein referred to as an enhanced reconnaissance study, requires significant effort above the current “expedited” reconnaissance study model, yet provides results that are less detailed than the feasibility level of study.

The Comprehensive Plan report will be organized as a combined report, to include NED, EQ, and OSE accounts, and a Programmatic Environmental Impact Statement.

2.2 Authority

The Upper Mississippi River Comprehensive Plan study was authorized as part of the Water Resources Development Act of 1999. The specific authorizing language follows:

Water Resources Development Act of 1999

SEC. 459. UPPER MISSISSIPPI RIVER COMPREHENSIVE PLAN.

(a) DEVELOPMENT. —The Secretary shall develop a plan to address water resource and related land resource problems and opportunities in the upper Mississippi and Illinois River basins from Cairo, Illinois, to the headwaters of the Mississippi River, in the interest of the systemic flood damage reduction by means of—

- (1) Structural and nonstructural flood control and floodplain management strategies;*
- (2) Continued maintenance of the navigation project;*
- (3) Management of bank caving and erosion;*
- (4) Watershed nutrient and sediment management;*
- (5) Habitat management;*
- (6) Recreation needs; and*

- (7) *Other related purposes.*
- (b) *CONTENTS. —The plan under subsection (a) shall—*
 - (1) *Contain recommendations on management plans and actions to be carried out by the responsible Federal and non-Federal entities;*
 - (2) *Specifically address recommendations to authorize construction of a systemic flood control project for the upper Mississippi River; and*
 - (3) *Include recommendations for Federal action where appropriate and recommendations for follow-on studies for problem areas for which data or current technology does not allow immediate solution.*
- (c) *CONSULTATION AND USE OF EXISTING DATA. —In carrying out this section, the Secretary shall—*
 - (1) *Consult with appropriate Federal and State agencies; and*
 - (2) *Make maximum use of data in existence on the date of enactment of this Act and ongoing programs and efforts of Federal agencies and States in developing the plan under subsection (a).*
- (d) *COST SHARING. —*
 - (1) *DEVELOPMENT. —Development of the plan under subsection (a) shall be at Federal expense.*
 - (2) *FEASIBILITY STUDIES. —Feasibility studies resulting from development of the plan shall be subject to cost sharing under section 105 of the Water Resources Development Act of 1986 (33 U.S.C. 2215).*
- (e) *REPORT. —Not later than 3 years after the date of enactment of this Act, the Secretary shall submit to the Committee on Transportation and Infrastructure of the House of Representatives and the Committee on Environment and Public Works of the Senate a report that includes the plan under subsection (a).*

The initial authorizing language fixed the study duration to 3 years from the date of authorization. This was subsequently amended in the WRDA 2000, Section 404 so as to tie the duration to the receipt of initial appropriation.

Section 459(e) of the Water Resources Development Act of 1999 (113 Stat. 333) is amended by striking “date of enactment of this Act” and inserting “first date on which funds are appropriated to carry out this section.”

Note: The initial appropriation for this study was received in October 2001. HQUSACE approval to begin expending those funds was not received until December 2001.

2.3 Study Area

Per the authorizing legislation, the geographic area of consideration for this study is the “the upper Mississippi and Illinois River basins, from Cairo, Illinois, to the headwaters of the Mississippi River.” This area encompasses nearly 189,000 square miles (see Figure 1). Due to study time and funding constraints and other considerations (e.g., previously completed comprehensive planning efforts for the Upper Mississippi River above St. Paul; inclusion of the lower reach of the Upper Mississippi River [below Thebes, IL] in the MR&T program; limited opportunities for flood damage reduction above the confluence of the Kankakee and Des Plaines

Rivers), this study will focus primarily upon planning for the (.2% chance) 500-year floodplains of the reach of the Upper Mississippi River between Anoka, MN, and Thebes, IL, and the reach of the Illinois River that lies between its confluence with the Mississippi and the confluence of the Kankakee and Des Plaines Rivers (see Figure 1).

2.4 Stakeholders

Given the geographic extent of the study area and comprehensiveness of the authorizing language, there is a very large and diverse number of potential stakeholders. Primary participating Federal agencies, in addition to the Corps, are expected to be FEMA, agencies within the Departments of Interior and Agriculture (e.g., USFWS, USGS, NRCS) and the EPA. Similarly, those state agencies responsible for floodplain management, environmental protection and natural resources, agriculture, recreation and economic development will be key participants. Regional (e.g., Bi-State Regional Planning Commission) and local units (counties, municipalities) of government will, to the extent practicable, be engaged. Non-governmental organizations such as UMIMRA and the MRBA are expected to represent their constituencies. Obviously, all individuals who live in the floodplain areas to be studied and/or whose livelihoods are dependent upon various uses of those floodplains are clearly stakeholders. Broad public interest in this study is expected due to the tremendous ecological and recreational values these floodplains provide.

2.5 Goals and Objectives (Draft)

During the development of this PMP, potential study goals and objectives were extensively discussed. For purposes of communicating the current expectations of this study, building stakeholder consensus, and supporting the Corps' internal approval process for this document, the following draft study goals and objectives are proposed. These goals and objectives will be collaboratively refined, revised, or validated during the early course of this study.

2.5.1 Draft Goals

Develop a recommended systemic floodplain plan for the Upper Mississippi and Illinois Rivers, sufficiently comprehensive to address flood damage reduction needs, while at the same time supporting evolving long-term UMR economic and environmental sustainability goals.

Upper Mississippi River Basin



Figure 1. Basin and proposed study reaches map.

2.5.2 Draft Objectives

1. Conduct a systemic level evaluation of 3 to 5 alternative floodplain plans, consisting of combinations of both structural and nonstructural measures. When implemented, these plans would reduce flood damages in a manner consistent with protecting the Nation's environment, pursuant to national environmental statutes, applicable Executive Orders, and other Federal planning requirements.
2. Identified flood damage reduction plans would be evaluated based upon their contributions to one or more of the Corps' System of Accounts. This will include an NED plan that roughly maximizes net National Economic Development benefits while factoring in the OSE and EQ accounts. In addition, potential sites will be identified for floodplain ecosystem restoration opportunities where an NER analysis will be conducted.
3. In addition, the study will investigate a systemic flood routing plan consisting of operational and/or minor structural modifications to the existing flood damage reduction system, that would seek to minimize economic damages from major (1% chance and greater) flood events.

3.0 Study Considerations

3.1 Assumptions

The number of potential flood damage reduction alternatives and permutations within each of those alternatives on a system as large as the Upper Mississippi River is nearly infinite. The recommended plan, although not optimized, will significantly refine the range of acceptable, justifiable potential options. It also may identify certain action(s), project(s), or program(s) that can be immediately implemented based upon the results of this study or subject to the completion of more detailed feasibility level study(ies).

The new profiles for the Upper Mississippi and Illinois Rivers will be completed as currently scheduled and will serve as the basis for the evaluation of all study alternatives.

Hydraulic analysis will be conducted using existing UNET models. Hydraulic modeling procedures will be agreed upon by all three districts, and will follow procedures developed during the Flow Frequency Study.

A Project Design Flood, Standard Project Flood, Probable Maximum Flood or similar will not be developed as part of this effort. However, the scoping efforts to eventually do so will be accomplished.

There are many disparate visions for the future of the Upper Mississippi and Illinois River floodplains. A systemic, comprehensive floodplain plan that satisfies, without compromise, all interests and expectations will be difficult to attain. However, a plan can be identified that, if implemented, results in reduced future flood damages and progress towards system economic and environmental sustainability goals.

The existing UMRS collaboration/coordination infrastructure (e.g., NECC/ECC, FFS Task Force, UMRCC, EMPCC, UMRBA, etc.) does not optimally align with the proposed goals and objectives of this study. To assure thorough study collaboration, coordination, and communication, both a new collaboration team and four regional focus groups consisting of governmental and non-governmental organization representatives will be established. The team and these groups will bring together the flood protection and damage reduction, and floodplain economic, environmental, and recreation interests.

The recommended plan will consider local and regional economic sustainability concerns in conjunction with current Federal, State, and local floodplain management regulations, guidance, etc. (e.g., E.O. 11988).

The study will build extensively upon previously completed studies, reports, and documents (see Appendix 3).

3.2 Constraints

3.2.1 Data

The study will almost exclusively utilize existing data. Much of the data to be used may be non-systemic and/or of less than optimal currency or resolution. These data qualities will directly influence the study results.

Examples:

Only portions of the systemic 2000 Land Use/Land Cover (LU/LC) mapping, being done as part of the UMRs-EMP, will be available for use in the development and evaluation of alternatives for this study.

Systemic, high resolution topographic mapping of the floodplain does not currently exist. This mapping would support improved comprehensive systemic planning for both flood damage reduction and habitat restoration and the production of updated or new flood insurance rate maps for the subject floodplain areas.

A current inventory of all floodplain structures to include building first floor elevation, appraised value, current use, etc., does not exist. Economic evaluation of flood damage reduction alternatives and residual risks is limited by the lack of such data. Much of the existing data are 10-50 years old and may not accurately reflect current conditions.

3.2.2 Duration

Although authorized as a 3-year study, actual core study time, considering PMP preparation time and final report submittal processing, will be approximately 2 years (July 2002 to July 2004). In order to meet this timeframe, there will be minimal collection and processing of new data, limited formulation and evaluation of alternatives, and expedited coordination and reviews of interim products.

3.2.3 Funding

The level of Federal (Corps of Engineers) funding for this study has been limited to approximately \$5 million. At this level of funding, considering the geographic extent of the study area, the complexity of the problems, needs, and opportunities involved, and the potential number of possible alternative plans for floodplain management, study results will be of relatively low resolution and not truly comprehensive (i.e., certain systemic considerations [e.g., water quality, sediment and nutrient loading, etc.] will minimally be considered during the plan formulation and evaluation process) and not optimized.

Due to funding constraints, certain current or future floodplain activities, issues, conditions, and alternative futures that are components of a comprehensive plan will be minimally addressed during the course of this study. These may include, but are not limited to, the following:

- Enhancement of existing floodplain habitat
- Potential economic, environmental, hydrologic and hydraulic effects of global warming and global economic scenarios
- Water quality
- Sediment and nutrient loading
- Bankline erosion
- Gulf hypoxia
- Alternative agriculture (inundation tolerant, etc.)
- Ecotourism potentials
- Aesthetics

3.3 Concerns

Inconsistent/conflicting interstate floodplain management regulations (e.g., floodway effects of any action).

Conflicting natural resources management philosophies (e.g., floodplain isolation vs. connectivity).

3.4 Study Development Guidance

The following summarizes significant guidance agreed to by Corps Headquarters, Division, and District offices to date:

- Programmatic EIS would be completed as part of the 100% Federal cost
- Primary focus of the plan needs to be the identification and evaluation of flood damage reduction alternatives. Associated environmental restoration needs and enhancement of recreation opportunities would be simultaneously considered.
- Any systemic plan for flood damage reduction must also consider environmental sustainability needs
- Study needs to be closely coordinated with the ongoing Navigation Study, particularly the ecosystem restoration component
- Study is to be accomplished at a level of detail similar to a traditional reconnaissance study. However, this level of detail is normally insufficient to support a project or program authorization recommendation.

3.5 Stakeholder Input

Appendix 2 provides written stakeholder input as received to date.

Several meetings with representatives from various stakeholder interests, including UMIMRA and the MRBA, have occurred during the development of this PMP. In addition, a sensing session, that included representatives from these organizations as well as the UMRBA, USFWS, MO SEMA, and IDNR, was held on April 24, 2002, in St. Louis, Missouri.

A draft of this document was distributed to UMRBA representatives and other external interests for review and comment prior to final routing for internal approval.

4.0 Product Delivery Process

4.1 Product Delivery Team (PDT)

The Corps of Engineers has established a vertical, interdisciplinary team to carry out this study. This team, the Corps' Product Delivery Team, or PDT, includes project management, plan formulation, and technical staff from three Corps Districts (CEMVR, CEMVS, CEMVP) as well as CEMVD and HQUSACE management staff (see Appendix 1 for detailed list of primary PDT members). This team is responsible for accomplishing or assuring the accomplishment of (i.e., certain project tasks may be completed via private sector contracting) all study tasks and deliverable products. These tasks and products include project management functions, plan formulation activities, technical analysis of alternatives, public involvement efforts, document preparation, etc. By establishing a vertical team, the time requirements for accomplishing interim and final product reviews and related report processing steps will be reduced, and more effective and efficient integration of study efforts and outputs with those of other ongoing studies, programs, and projects will be realized.

Many of the PDT members also are actively engaged in other Corps studies, programs, and projects (e.g., UMRS-EMP, Flow Frequency Study, and the UMR-IWW System Navigation Study) that are currently addressing various system problems and needs of the river system or are actively engaged in developing long-term plans for certain system components. This "cross pollination" will ensure that the products of this study are consistent and integrated with those of other related efforts and that a foundation upon which a truly "Comprehensive Plan" for the system may be built is put in place.

4.2 Roles and Responsibilities

Table 1 provides the Study Responsibility Assignment Matrix. This matrix provides information as to the lead and contributing district for major study tasks. The specific tasks are described in Section 6.0.

Table 1. Study Responsibility Assignment Matrix

| WBS Code | Activity | M V P | M V R | M V S | H E C |
|-----------------|--|----------------------|----------------------|----------------------|----------------------|
| 2 | Project Management | 2 | 1 | 2 | |
| 3 | Plan Formulation | 2 | 2 | 1 | |
| 3.4 | Public Involvement | 2 | 1 | 2 | |
| 4 | Hydraulic Modeling | 2 | 2 | 1 | |
| 4.1 | SPF SOW Development | 2 | 2 | 2 | 1 |
| 5 | Economic Analysis | 2 | 1 | 2 | |
| 6 | Unit Costs and Generic Quantities | 2 | 2 | 1 | |
| 7 | Environmental Analysis | 2 | 2 | 1 | |
| 8 | Cultural Resources Analysis | 2 | 1 | 2 | |
| 9 | Recreation Analysis | 1 | 2 | 2 | |
| 10 | Real Estate Analysis | 2 | 1 | 2 | |
| 11 | Mapping and GIS | 2 | 1 | 2 | |

1 = Lead District

2 = Contributing District

4.3 Collaboration, Coordination, and Communication (Communications Plan)

History has shown that successful planning requires active and continuous collaboration, coordination, and communication with all stakeholders. The PDT recognized early on that a planning effort of this geographic magnitude and complexity would require extensive interaction with multiple units of Federal, state, county and local government, an array of non-governmental organizations, and a large general public. To best accomplish this within the timeframe and budget set forth for this study, the PDT has proposed that a “collaboration team” and four “regional focus groups” be established along with the accomplishment of an extensive public involvement program.

In addition, continuous and intensive collaboration, coordination, and communication with PDTs for other Corps and non-Corps related studies, projects, and programs will be a common pursuit.

4.3.1 The Collaboration Team

The Collaboration Team (CT) will consist of mid to upper level Federal and state government staff along with certain non-governmental organization representatives who have significant responsibilities for or interest in various aspects of floodplain management, particularly flood damage reduction, economic development, natural resources, and recreation.

The CT will work closely with the PDT throughout the duration of the study. The CT is expected to provide comment and input on the identification, validation, and prioritization of system-level problems, needs, and opportunities; and facilitate project coordination and

communication efforts, particularly with respect to their respective agencies, organizations, and publics.

Although the CT will provide very valuable input and insight to the PDT, it will not be “advisory” and thus will not be subject to FACA rules and regulations.

The specific team composition, along with the identification of representatives, will be established early in the study.

UMRCP Collaboration Team (proposed composition)

Federal

Corps of Engineers – Headquarters, Washington, D.C.
Corps of Engineers – Mississippi Valley Division, Vicksburg, MS
Corps of Engineers – Rock Island District, Rock Island, IL
Corps of Engineers – St. Louis District, St. Louis, MO
Corps of Engineers – St. Paul District, St. Paul, MN
Federal Emergency Management Agency, Region 5, Chicago, IL
Federal Emergency Management Agency, Region 7, Kansas City, MO
Natural Resources Conservation Service
United States Geological Survey
United States Fish and Wildlife Service
United States Department of Agriculture
United States Environmental Protection Agency

State

State of Illinois
State of Iowa
State of Missouri
State of Minnesota
State of Wisconsin

Non-Governmental

Upper Mississippi, Illinois, and Missouri Rivers Association
Mississippi River Basin Alliance

4.3.2 The Regional Focus Groups

The purpose of the four regional focus groups will be to bring regional and local perspectives and considerations to the systemic plan formulation process. Focus group meetings will serve as “sensing sessions.” Attendees at these sessions will include both technical and non-technical individuals that represent more local levels or units of government and non-governmental organizations and interests (e.g., regional planning and economic development commissions,

county and municipal government representatives, levee and drainage district commissioners, refuge and conservation area managers, RC&D staff, etc.).

Group 1 - Upper Upper Mississippi River (~Dubuque, IA to Anoka, MN)

Group 2 - Middle Upper Mississippi River (~Quincy, IL to Dubuque, IA)

Group 3 - Lower Upper Mississippi River (Thebes, IL to Quincy, IL)

Group 4 - Illinois River (Grafton, IL to Des Plaines/Kankakee confluence)

4.4 Public Involvement Plan

This study has the potential to significantly affect the planning and implementation of future structural and nonstructural flood damage reduction measures and other aspects of floodplain management, including environmental sustainability, throughout the Upper Mississippi and Illinois River floodplains. It is therefore appropriate that an extensive and intensive public involvement program be carried out as part of the study. The study will need to consider a complex array of issues and competing interests. Information dissemination, public education, and gathering input from the public will be important components of the study public involvement efforts. The primary public involvement activities include:

4.4.1 Developing and maintaining a study mailing list

An initial mailing list will be developed from the mailing lists for the UMR-IWW System Navigation Study and the UMRS Flow Frequency Study.

4.4.2 Holding two sets of four public meetings

Two sets of public meetings will be held during the study. These meetings will be held at four locations consistent with the study sub-reaches (upper reach, middle reach, lower reach, Illinois River reach) as identified in Section 4.3.2. The first set of meetings will be held during September 2002. An open house format will be employed for these meetings. During those meetings, the public will be provided information on the study's scope and purpose and asked to identify floodplain problems, needs, and opportunities. They also will be asked to help refine the list of potential flood damage reduction measures and alternatives. These open houses will be scoping meetings that fulfill the scoping requirements of the National Environmental Protection Act.

The second set of meetings will be held in spring 2004. At those meetings, study results will be presented to the public for their review and feedback. The format for these meetings will be determined when the meetings are planned to assure that the meeting purpose is achieved.

4.4.3 Developing and maintaining an Internet-accessible study website

The website has been established. The address is: <http://www.mvr.usace.army.mil/UMRCP/>

4.4.4 Preparing and distributing the Notice of Study Initiation and four study newsletters

A Notice of Study Initiation, to include a general description of the study, processes to be used, likely products, and other study scope information, will be distributed, utilizing the initial mailing list, prior to the initial round of public meetings.

Newsletters will be one of the vehicles for communicating study progress and outputs. Four newsletters will be distributed, one approximately every 6 months.

4.4.5 Analyzing public comments

Public input received via the public meetings, comment cards, or other means of communication will be recorded and analyzed (content analysis). The PDT will use the content analysis results in their formulation of alternatives and development of a recommended systemic flood damage reduction plan for the Upper Mississippi and Illinois Rivers. The results of the content analysis will also be shared with the public in the study newsletters, through the website, and via other opportunities.

4.4.6 Developing other information documents (e.g., fact sheets, brochures) and display materials

Study status information and interim products will be shared with the public via formal and informal presentations, distributions, and displays.

CEMVR will have primary responsibility for all aspects of public involvement. All public involvement mailings will originate from CEMVR so as to avoid duplication and assure coordination with other aspects of the public involvement effort.

5.0 Study Cost Estimate and Major Milestones

Authorized Study Duration – 3 years (December 2001 – December 2004)

Study Cost (2002 Price Level) Estimate – \$4,840,000

Table 2. Working Cost Estimate, Projected Distribution by District and Fiscal Year

UMRCP Cost Estimate (\$000's)

By Corps District

| Work Item | Recon | | | | |
|---------------------------|--------------|------------|------------|-----------|-------------------|
| | Phase | CEMVS | CEMVR | CEMVP | |
| Public Involvement | 400 | 70 | 285 | 45 | 400 |
| Cultural Resources | 85 | 25 | 50 | 10 | 85 |
| Recreation | 150 | 35 | 35 | 80 | 150 |
| Environmental | 900 | 425 | 325 | 150 | 900 |
| Economic Analysis | 800 | 275 | 375 | 150 | 800 |
| Hydrology & Hydraulics | 950 | 375 | 400 | 175 | 950 |
| Surveying & Mapping (GIS) | 250 | 50 | 150 | 50 | 250 |
| Foundations and Materials | 80 | 50 | 20 | 10 | 80 |
| Design & Cost Estimates | 250 | 180 | 50 | 20 | 250 |
| Real Estate | 150 | 45 | 80 | 25 | 150 |
| Project Management | 375 | 70 | 260 | 45 | 375 |
| Plan Formulation | 375 | 200 | 125 | 50 | 375 |
| Report Preparation | 75 | 15 | 50 | 10 | 75 |
| | | | | | 4840 |
| TOTAL: | 4,840 | 1815 | 2,205 | 820 | 4840 (uninflated) |

Bold values indicate that certain lead responsibilities reside with the respective District.

By Fiscal Year

| Work Item | FY02 | FY03 | FY04 | FY05 | TOTAL |
|---------------------------|------|------|------|------|-------------------|
| Public Involvement | 75 | 165 | 155 | 5 | 400 |
| Cultural Resources | 5 | 30 | 45 | 5 | 85 |
| Recreation | 10 | 70 | 65 | 5 | 150 |
| Environmental | 75 | 420 | 400 | 5 | 900 |
| Economic Analysis | 120 | 480 | 195 | 5 | 800 |
| Hydrology & Hydraulics | 75 | 700 | 170 | 5 | 950 |
| Surveying & Mapping (GIS) | 60 | 85 | 100 | 5 | 250 |
| Foundations and Materials | 0 | 30 | 45 | 5 | 80 |
| Design & Cost Estimates | 35 | 150 | 60 | 5 | 250 |
| Real Estate | 0 | 75 | 70 | 5 | 150 |
| Project Management | 75 | 140 | 140 | 20 | 375 |
| Plan Formulation | 100 | 170 | 100 | 5 | 375 |
| Report Preparation | 0 | 0 | 70 | 5 | 75 |
| | | | | | 4840 (uninflated) |
| | 630 | 2515 | 1615 | 80 | 4840 (uninflated) |

* The FY 03 President's budget and Senate Energy and Water Development Subcommittee mark up allocate \$1,814,000 for the continuation of this study. This budget allocation reflects a funding request that was based upon a smaller projected study budget (\$3 million). Considering the current total estimated study cost of \$4,840,000 and the highly constrained study schedule (approximately July 02 to July 04), a significantly greater level of study effort will need to be accomplished and budgeted for in FY 03. This is reflected in the table above.

Note: An account will be established to manage and provide contingency funding for the study. The contingency account will be used to cover any unforeseen costs incurred during the course of the study. It is expected that contingency funding will equate to approximately 10%-12% of total project appropriations. Use of the contingency account will be under the direction of the Regional Project Manager.

Major Milestones (schedule)

| | |
|---|-----------------|
| Develop PMP/Initiate Preliminary Study Activities | Dec 01 - Aug 02 |
| Distribute Study Initiation letter | Aug 02 |
| Establish Collaboration Team | Aug 02 |
| Establish Regional Focus Groups | Aug 02 |
| Public Involvement Open Houses | Sep 02 |
| Complete definition of baseline condition | Jan 03 |
| Study Scoping Meeting | Feb 03 |
| Formulate/evaluate preliminary plans | Oct 02 - May 03 |
| Formulate/evaluate final plans | May 03 - Nov 03 |
| Alternative Formulation Briefing | Sep 03 |
| Independent Technical Review (ITR) | Jan 04 |
| Public Meetings | Mar 04 |
| Revise report and recommended plan | Mar - Apr 04 |
| Final report and recommended plan preparation | May - Jun 04 |
| Forward final report to CEMVD | Jul 04 |
| Secretary submits Report to Congress | Dec 04 |

6.0 Study Tasks (Descriptions, Cost Estimates, and Durations)

6.1 Plan Formulation

Table 3. Plan Formulation Task List

Revised 7-22-02

| Task No. | Preceding Tasks | Task | Start | Finish | Cost (\$000) |
|-----------------|------------------------|---|--------------|---------------|-------------------------|
| 1 | -- | Long term coordination with PDT | 1 Jan 02 | 31 Dec 04 | |
| 2 | -- | Organize Collaboration Team (CT) | 1 Aug 02 | 15 Aug 02 | |
| 2a | -- | Set up ITR Team | 1 Aug 02 | 15 Aug 02 | |
| 3 | -- | Tech problem ident (PI) and dev of objectives (lit search) | 22 Jul 02 | 9 Aug 02 | * |
| 3a | -- | Dev and send Notice of Intent to prepare EIS | 1 Aug 02 | 15 Aug 02 | * |
| 3b | -- | Negotiate F&W Coord Act requirements (incl ESA) | 15 Jul 02 | 30 Aug 02 | * |
| 4 | 2,3 | Forward PI/objectives read ahead package | 12 Jul 02 | 13 Aug 02 | |
| 5 | 4 | Collaboration Team Meeting # 1 | | 20 Aug 02 | * |
| 6 | 5 | Document & disseminate meeting results | 21 Aug 02 | 23 Aug 02 | |
| 7 | 6 | Develop and forward public read ahead package | 19 Aug 02 | 23 Aug 02 | |
| 8 | 7 | Public Scoping Meetings (4 total) | 9 Sep 02 | 12 Sep 02 | Incl in Pub Involvement |
| 9 | 8 | Revise problems & objectives per scoping meetings | 16 Sep 02 | 30 Sep 02 | |
| 10 | -- | Develop Regional Focus Groups (RFG) | 15 Aug 02 | 30 Sep 02 | |
| 11 | 9 | PDT drafts report sections (prob & oppor, exist cond, future w/o, constraints & study objectives) | 30 Sep 02 | 20 Jan 03 | * |
| 12 | 9 | PDT performs preliminary measures screening | 10 Oct 02 | 18 Oct 02 | * |
| 13 | 10,12 | Send RFGs read ahead on problems & measures | 21 Oct 02 | 25 Oct 02 | |
| 14 | 13 | Hold RFG Meeting #1 (4 Total) | 4 Nov 02 | 8 Nov 02 | * |
| 15 | 14 | Revise measures screening & send to CT | 11 Nov 02 | 15 Nov 02 | |
| 16 | 15 | CT Meeting #2 (measures selection incl flood routing) | | 26 Nov 02 | * |
| 17 | 16 | Document & disseminate CT meeting results | 27 Nov 02 | 2 Dec 02 | |
| 18 | -- | Develop generic quantities for measures | 1 Aug 02 | 15 Dec 02 | * |
| 19 | -- | Develop unit costs for measures | 1 Aug 02 | 3 Jan 03 | * |
| 19a | -- | Make existing cond. H&H/econ runs | 2 Dec 02 | 21 Dec 02 | * |
| 20 | 16,19a | H&H makes prelim UNET runs on Flood Routing Plan | 9 Dec 02 | 17 Jan 03 | * |
| 21 | 19a | PDT tests FDR measures in test reaches (BC analysis - no UNET runs) | 21 Dec 02 | 17 Jan 03 | * |

| Task No. | Preceding Tasks | Task | Start | Finish | Cost (\$000) |
|-----------------|------------------------|---|--------------|---------------|-----------------------------|
| 22 | 20,21 | PDT develops Strawman Plan Alt for CT read ahead | 20 Jan 03 | 24 Jan 03 | * |
| 23 | 22 | Hold CT Meeting #3 (alternatives formulation) | 30 Jan 03 | 30 Jan 03 | * |
| 24 | 23 | Document CT Meeting | 31 Jan 03 | 5 Feb 03 | |
| 24a | 22 | Request Planning Aid Letter | 5 Feb 03 | 5 Feb 03 | * |
| 25 | 24 | Corps Study Scoping Meeting (similar to FSM) | 5 Feb 03 | 5 Feb 03 | * |
| 26 | 25 | PDT makes 2nd iteration UNET run of Flood Routing Plan | 6 Feb 03 | 21 Mar 03 | * |
| 27 | 25 | H&H makes 1st UNET runs of FDR/ER plans | 6 Feb 03 | 28 Apr 03 | * |
| 28 | 27 | PDT performs econ, NER & cost analysis | 21 Apr 03 | 2 May 03 | * |
| 29 | 28 | PDT develops prelim plan assess for CT Read ahead | 5 May 03 | 9 May 03 | * |
| 30 | 29 | Hold CT Meeting #4 (assess plans & revise) | 15 May 03 | 15 May 03 | * |
| 31 | 30 | Document & disseminate mtg results | 16 May 03 | 23 May 03 | |
| 32 | 30 | H&H runs final UNET modeling of plans | 16 May 03 | 30 Jun 03 | * |
| 33 | 32 | PDT - final plan costs, benefits & assessment | 16 Jun 03 | 11 Jul 03 | * |
| 34 | 33 | PDT performs evaluations & tentatively selects recommended plan | 14 Jul 03 | 18 Jul 03 | * |
| 35 | 34 | PDT documents & forwards to CT | 21 Jul 03 | 24 Jul 03 | * |
| 36 | 35 | CT Meeting #5 (Plan Selection Meeting) | | 30 Jul 03 | * |
| 37 | 36 | Document CT Meeting #5 | 31 Jul 03 | 6 Aug 03 | |
| 38 | 36 | Develop & mail AFB package to MVD/HQ | 31 Jul 03 | 22 Aug 03 | |
| 39 | 38 | Alternative Formulation Briefing (CT in attendance) | | 22 Sep 03 | |
| 40 | 39 | PDT makes any plan modifications if needed | 23 Sep 03 | 13 Oct 03 | * |
| 41 | 40 | Forward results to RFGs | | 15 Oct 03 | |
| 42 | 41 | Hold RFG meetings (4 total) | 21 Oct 03 | 24 Oct 03 | * |
| 43 | 42 | PDT performs any plan refinements needed | 27 Oct 03 | 7 Nov 03 | * |
| 44 | 43 | PDT prepares remainder of draft report/DEIS | 27 Oct 03 | 16 Jan 04 | * |
| 44a | 44 | Internal Technical Review (off-site) | 19 Jan 04 | 23 Jan 04 | |
| 44b | 44a | Draft Report Revisions to reflect ITR comments | 26 Jan 04 | 13 Feb 04 | * |
| 44c | 44b | Draft report reproduction | 13 Feb 04 | 27 Feb 04 | Incl in Report Reproduction |
| 45 | 44c | Draft Report/DEIS is disseminated | | 1 Mar 04 | |
| 46 | 45 | Final Public Meetings are held (4 total) | 22 Mar 04 | 25 Mar 04 | Incl in Pub Involvement |
| 47 | 45 | All public & agencies comments are received | | 16 Apr 04 | |
| 48 | 47 | Draft Report/DEIS is revised | 16 Apr 04 | 30 Jun 04 | * |
| 49 | 48 | Submit Final Report/EIS to MVD | 1 Jul 04 | 1 Jul 04 | |

* Costs for these items (other than for plan formulators) are included in cost estimates for individual disciplines.

Table 4. Plan Formulation Study Cost Estimate (\$1,000's)*

| | |
|---|---------|
| Development of PMP | \$ 30.0 |
| Internal Coordination with PDT | 25.0 |
| Coord for & Attendance at outside meetings (CT, RFG, Public, FSM, AFB, etc) | 45.0 |
| Development of Read Ahead Documents for Various Meetings..... | 35.0 |
| Development of Problems, Objectives, Future without Condition..... | 30.0 |
| Development of and Initial Screening of Measures..... | 25.0 |
| Formulation of System Plans | 50.0 |
| Evaluation of System Plans | 25.0 |
| Preparation of FSM and AFB Packages | 10.0 |
| Preparation of Draft Report Sections | 40.0 |
| Preparation of Final Report..... | 20.0 |
| Contingency | 40.0 |
| TOTAL..... | 375.0 |

* This estimate includes costs for those principally involved in plan formulation. It assumes that any costs on the part of other Corps Work Groups (e.g., H&H, Econ) associated with plan formulation are included within their cost estimates, including the costs associated with meeting attendance and report preparation.

6.2 Economics

6.2.1 Describe Existing Conditions (land use, demographics, levees in place); Construct Elevation/Damage and Damage/Frequency Relationships for protected and unprotected areas; Estimate Average Annual Damages

- Prepare inventory of levees in the study area to include names of levees, type of levee (urban, agricultural, industrial), identify if federally constructed, location, including river mile, and overtopping elevations (using hydraulic Flow Frequency Study data). Calculate average annual damages for the existing condition for each area (leveed and non-leveed) using existing data.
- Identify major infrastructure within the study area. This would include major roads and bridges, public utilities, railroads, and airports. Calculate average annual damages for affected areas within the study area based on existing data.

6.2.2 Compare Effects for Alternatives

- Calculate flood damage reduction benefits and other benefit categories for each alternative.
- Calculate net annual NED benefits and benefit-to-cost ratios for each alternative.
- Tabulate and compare net benefits and benefit-to-cost ratios for each alternative. The plan that provides the greatest net benefit and has a benefit-to-cost ratio exceeding 1.0 to 1 will be identified as the NED Plan.
- Complete generalized Regional Economic Benefits (RED) for construction impacts. This will be completed by contract.
- Provide interim results to PDT.
- Write Economic Analysis Appendix.
- Present results in an Economic Appendix and incorporate summary results into the main body of the report.
- Attend public, stakeholder, and team meetings to discuss economic contribution to study.

6.2.3 Complete Social Studies/Report

- Identify existing sociological, economic, and demographic conditions for the project area. Impacts to be considered under this social impact assessment include: community and regional growth; community cohesion, displacement of people; property values and tax revenues; public facilities and services; life, health and safety; business and industrial growth; employment and labor force; farm displacement; noise levels; and aesthetics.

6.3 Hydrology and Hydraulics (H&H)

6.3.1 Hydrology and Hydraulics Studies/Report

A detailed technical report will be prepared that describes the results of hydraulic and hydrologic studies conducted during the study to evaluate the alternative plans. Based on the results of the H&H and subsequent analysis, recommendations will be formulated. Due to funding constraints, only a limited evaluation of nutrient and sediment loading effects will be accomplished, and done so primarily in conjunction with the natural resources effort. The report will document the data used, assumptions, methodology, results, limitations, and conclusions. In addition, recommendations for future studies and data requirements will be prepared to overcome any limitations identified.

6.3.2 Development of Hydraulic Modeling Methodology

The H&H Team will develop a methodology to be used by the three districts in evaluating existing conditions and the impacts of project alternatives. The methodology will generally follow that used as part of the ongoing Upper Mississippi River Flow Frequency Study. The methodology will rely on existing hydraulic models, with no new model development or data collection (with the exception of Task 6.3.8 below). In addition, consideration will be given to the content, spatial resolution, and format of output required by the other project teams (economics, natural resources, recreation, etc.).

6.3.3 GIS Development and Coordination

The H&H Team will support the Mapping and GIS Applications Team in the creation of a systemic spatial database.

6.3.4 Evaluation of Upland Measures for Flood Damage Reduction

A literature review will be conducted to identify the range of possible upland measures (in the interest of mainstem flood damage reduction) and their applicability to the UMR watershed. Alternative measures will be summarized in terms of perceived feasibility of implementation and effectiveness. Based on this review, alternative upland measures may be carried forward for inclusion in project alternatives.

6.3.5 Scoping of SPF/PDF Development Process and Requirements

The H&H Team, in cooperation with HEC and IWR, will develop a Scope of Work for the development of a Standard Project Flood (SPF) or Project Design Flood (PDF) for the Upper Mississippi and Illinois Rivers. Development of portions or the entire Scope of Work may be contracted to one or more specialists with expert knowledge in statistical hydrology. The Scope of Work will include recommendations of the methodology for the SPF/PDF development, and a discussion of the limitations and uncertainty associated with an SPF/PDF.

6.3.6 Hydraulic Evaluation of Existing Conditions

Existing computer models will be used to establish existing or baseline conditions for subsequent analysis of the project alternatives. Water surface profiles, stage-discharge, and stage-frequency relationships will be prepared for each reach to define the baseline hydrologic conditions. Water surface profiles will be developed using the existing UNET unsteady flow routing models and methodology developed under Task 6.3.2.

6.3.7 Hydraulic Evaluation of Project Alternatives

This task includes detailed hydraulic analysis of flood control alternatives for the UMR and IWW to help determine the most cost-effective plan for flood control in combination with consideration for floodplain restoration. Up to 5 alternatives for each of the UMR and IWW will be analyzed to assess the impacts on floodplain conditions and study objectives. The hydrologic and hydraulic effects of each project alternative will be determined through the use of the existing UNET models, using the methodology developed under Task 6.3.2, supplemented with engineering judgment. Alternatives may consist of a combination of structural and nonstructural measures, and have varying spatial scales.

6.3.8 Hydraulic Evaluation of Flow Diversions

This task involves assessment of a unique project alternative—the diversion of UMR flows to the Rock or Illinois Rivers through historical river corridors. This task involves the creation of new, split flow hydraulic unsteady flow models to determine the magnitude of the flow diversion and the impacts to mainstem stage-frequency relationships.

6.3.9 Independent Technical Review

This task involves Corps of Engineers internal technical review of the project products. The ITR members are assigned to the team to review the overall report or interim products for soundness of approach and technical accuracy.

6.4 Environmental Analysis

Environmental Planning Support

6.4.1 Establish Environmental Contact Groups

Interagency environmental contact will be established to collect and review information for habitat, sediment, nutrient, and environmental quality resources. Habitat groups will be established for each of five river reaches (UMR, Head of Navigation to L&D 10; UMR, L&D 10 to 22; UMR, L&D 22 to Mel Price L&D; UMR, Open River; and Illinois River [IR]). Each habitat group will identify and request input from external contacts, including a state fisheries biologist, state wildlife biologist, university ecologist, and USFWS biologist (from refuges and/or Environmental Services office). A sediment group will be formed to include NRCS/State Departments of Agriculture (DOAs) information and input. An environmental quality group

consisting of representation from the USEPA, state EPAs, and the Corps will collate data to characterize the river reaches for problems based on floodplain permits data for point sources, non-point sources, and HTRW sites. It is proposed that the nutrients group establish contact with the existing Mississippi River/Gulf of Mexico Watershed Nutrient Task Force. The cultural resources group will consist of the SHPOs of the five UMRS states and interested Native American Tribes.

6.4.2 Existing Environmental Conditions

A description of the existing habitat conditions will be developed using available literature. Primary sources include the 1998 UMRS Ecological Status and Trends Report by the LTRM, and the 2000 Habitat Needs Assessment (HNA) report. In addition, environmental sustainability values for the system and reach-specific areas will be derived from the prior HNA work. The date selected as the sustainability needs reference point will be consistent with that used for the UMR-IWW System Navigation Study. Sustainability will for the most part be expressed in terms of habitat acres, and not habitat units. A listing of state and federally listed endangered and threatened species will be requested for the study area from the five states and the USFWS, respectively.

The Corps (and NRCS under a MIPR) will use prior study reports (for example, 1969 Comprehensive Basin Study, NRCS watershed reports, EMP reports, and the Alexander and Pulaski Counties report) to provide the existing and future watershed sediment conditions. The Corps will use available background literature to describe the excess nutrient runoff problem in the UMRS study area and its associated hypoxia effects on the Gulf of Mexico. The Corps will collate existing environmental quality data to characterize the river reaches for problems based on floodplain permits data for point sources, non-point sources, and HTRW sites.

6.4.3 Future Without Environmental Conditions

The Corps will develop and coordinate with the environmental contact groups a strawman description of the future without resource conditions for the UMRCP study area.

6.4.4 Future Environmental Problems/Opportunities

The Corps will develop and coordinate with the environmental contact groups a description of the future environmental problems, needs, and opportunities for the UMRCP study area.

6.4.5 Develop Environmental Study Goals/Objectives Associated with Flood Damage Reduction

The environmental planning goals and objectives will be defined for the study area's significant environmental resources as a means of facilitating systemic flood damage reduction. UMRCP ecosystem related goals/objectives are envisioned to be similar to those that were determined for the HNA. However, these may change somewhat as additional information becomes available (e.g., the UMR-IWW feasibility study intends to conduct a scientific review of the HNA products).

6.4.6 Prepare Existing Environmental Conditions Writeup

The Corps will prepare a writeup for UMRCP existing environmental conditions. This document will be a collation of the work compiled by the environmental groups.

6.4.7 Preliminary Environmental Measures Formulation

A preliminary evaluation of environmental plan formulation measures will consist of measures identification, measures evaluation, and measures cost determination. The initial list of environmental planning measures will be derived from prior reports including (FPMA report, EMP reports, Galloway report, Delft report, etc.). Additional measures may be added in response to the work of the environmental groups or input from the CT, RFGs, or public open house meetings. The initial screening of environmental planning measures will be based on the available literature and PDT expert judgment. The measures will be rated against the four planning criteria—completeness, effectiveness, efficiency, and acceptability. Drawing upon existing reports (in particular the EMP reports) the environmental unit cost figures will be developed for a variety of potentially useful environmental measures. These costs will be used to assist in making rough cost estimates for various reach-specific EQ or ecosystem restoration measures associated with flood damage reduction alternatives within the UMRCP study area.

6.4.8 Development of Environmental Planning Features

Habitat management needs and opportunities will be worked in conjunction with the need to address the primary purpose of flood damage reduction. Close coordination with the UMR-IWW System Navigation Study will help to increase the comprehensiveness of the habitat work, while at the same time reducing costs.

As currently envisioned, a potential recommended project would consist of a combined NED/NER Plan. Such a project would produce both NED and NER benefits resulting in a plan or scale that has a higher excess of NED benefits plus NER benefits than other alternative plans, and offers the best balance of flood damage reduction and associated habitat measures. Recommendations for such a project will be based on a combination of NED benefit-cost analysis and NER benefits analysis, including cost effectiveness and incremental cost analysis. No project will be recommended in the absence of net positive NED benefits.

6.4.9 Development of Recommended Plan Environmental Features

The PDT will determine FDR-compatible measures for the development of any recommended plan. The environmental-related features would be derived from the reach-specific HMA work.

6.4.10 Environmental Plans Evaluations

A final evaluation of the study plans will be conducted by rating the plans against the Corps' four basic planning criteria—completeness, effectiveness, efficiency, and acceptability.

Environmental Impact Assessment

6.4.11 Prepare EIS Outline

To help facilitate the PDT's understanding of the study's NEPA documentation requirements, an EIS outline will be prepared for both the main text and the appendices. The development of this outline will be coordinated with the sub-team elements.

6.4.12 Notice of Intent for EIS

A notice of intent to prepare a draft EIS for publication in the Federal Register will be prepared in accordance with ER 200-2-2. A copy will be sent to the Washington and Regional Offices of the USEPA at the time the notice is sent to the Federal Register. Notice will be completed in the 1 Jul 02 - 9 Aug 02 timeframe.

6.4.13 Environmental Impact Studies

Various impact analyses will be conducted to include a habitat measures assessment (HMA), a GIS-based habitat mitigation analysis, a habitat restoration recommendations analysis, Clean Water Act Section 404 and 402 analyses, state and Federal endangered species analyses, CERCLA analysis, cumulative effects, prime farmland, social analysis, and USFWS Planning Aid Letter and draft and final Fish and Wildlife Coordination Act Reports. All analyses would be conducted at a programmatic (or conceptual) level of detail. It is understood that future site-specific feasibility studies would eventually follow-on after these more generalized assessments. The UMRCP environmental planning effort will not be confined to simply those actions that the Corps can implement. The group will include in its planning actions measures that might ultimately be implemented under some other authority and perhaps by another agency (e.g., the NRCS).

6.4.14 Prepare Programmatic Draft EIS

This task involves report preparation for official Corps/agency/public review comments. It entails assembling data and writing and editing the draft study main text and technical appendices.

6.4.15 Prepare Final EIS/Appendices Writeup

After giving consideration to environmental comments received on the draft feasibility report/EIS, the Corps will make appropriate modifications to the feasibility report and environmental documentation.

6.4.16 Prepare Record of Decision (ROD)

At the time of the Corps' decision on the project, a public record of decision (ROD) will be prepared. It will state the decision made, alternatives considered, trade-offs, avoid and minimize measures taken, and any mitigation included.

6.5 Recreation

The Recreation Team will participate in all the study team efforts, such as team meetings, the public meetings, inputs to the newsletters, report preparation/revisions, etc. The following are recreation-specific tasks.

6.5.1 Establish Regional Focus Group (RFG)

This group will be comprised of representatives from the DNRs, USFWS, and regional tourism organizations. They will provide insights as to recreational uses and needs of the riparian areas associated with flood damage reduction.

6.5.2 Obtain and review pertinent reports and inventories at the regional/state level

A rough demand, supply, needs assessment will be developed from pertinent reports and inventories at the regional/state level. The assessment would be more narrative than numeric in nature.

6.5.3 Develop a system-wide conceptual plan that addresses recreational features associated with flood damage reduction

This plan will be narrative in nature, and not site-specific. It will depict where additional recreational facilities are needed.

Because trail opportunities are likely to be created and trails can link other recreational opportunities and provide access, a regional trails assessment/plan will be developed.

6.5.4 As the alternatives are being formulated, determine the recreational opportunities lost or gained

- Begin to conceptualize potential recreational scenarios to take advantage of recreational opportunities that may be created and/or minimize the opportunities that may be lost.
- Obtain more site/area/region-specific data as to recreational needs to support conceptual recreation plans. The RFG would be an important player in this effort.
- Based on the system-wide conceptual recreation plan, develop conceptual site plans for the various alternatives. Coordinate with the other study elements to influence the layouts to take full advantage of the potential opportunities.

6.5.5 Develop a matrix of the various alternatives, ranking them from a recreational perspective

6.5.6 Based on the selected alternative, develop more detailed site plans

These plans will be used to develop visitation estimates, benefits analysis, and cost estimates.

6.5.7 Prepare report write-ups

This will include a narrative description of the conceptual plans developed for all the alternatives, with more detail provided (drawings, sketches, etc.) for the selected alternative.

6.6 Unit Costs and Generic Quantities

6.6.1 Geotechnical Studies

Geotechnical studies will address the need for underseepage control by developing a generic composite set of conditions based on results from several recent levee analyses. A generic seepage berm design will be developed and used except for instances where existing relief well fields or space limitations prevented its application. In these latter two cases, a generic relief well design would be developed and utilized. The Geotechnical Branch in each district will use this information to determine underseepage requirements associated with their district's portion of the 3 to 5 plans to be formulated. This information will be furnished to their Cost Engineering Branch.

6.6.2 Civil Engineering Studies

Civil engineering studies will focus primarily on developing generic quantities associated with levee construction and levee modifications. New levees, levee raises, levee realignments will be addressed for three different construction types—all clay, all sand, and sand with clay blanket. Formulas will be developed which will compute the following generic quantities: levee fill, berm fill, additional levee right-of-way, borrow area acreage, acreage of seeding, acreage of clearing and length of gravity drain extensions. Generic quantities will also be developed for various environmental restoration measures and recreation measures. Each Corps district will apply these generic quantity formulas to determine the quantities associated with 3 to 5 plans, the results of which will be provided to Cost Engineering or Real Estate for final costing.

6.6.3 Structural Engineering Studies

Structural studies will focus on two measures—floodwalls and closure structures. For floodwalls, studies will determine the feasibility of raising walls by various heights and will provide generic quantities for new wall construction to various heights. Generic quantities will also be developed for new closure structures of various heights and for raising existing closure structures which are structurally sound. Structural units in each Corps district will determine the need for closure structures/modifications and floodwalls or floodwall raises associated with 3 to 5 plans.

6.6.4 Mechanical/Electrical Engineering Studies

These studies will focus on the cost of new pump stations and increasing the capacity of existing pump stations (to accommodate pumping against higher heads or the additional flows from new relief wells). Generic costs will be developed for a variety of capacity increases. Mechanical/electrical units in each Corps district will determine the need for pumping capacity increases associated with each of the 3 - 5 plans and provide to Cost Engineering.

6.6.5 Cost Engineering

Unit costs will be developed for a variety of types and sizes of measures described above. It may be advisable that each of the three Corps districts develop individual unit costs for some measures because of variation in construction costs between the three districts. In any event, Cost Engineering branches will take quantities provided by the above elements for 3 to 5 plans and develop plan costs.

6.7 Mapping and GIS (Geographic Information Systems)

6.7.1 Inventory Existing GIS Data Sets

The Mapping and GIS Applications Team will support the efforts of the Project Management and Plan Formulation, Economics, Natural Resources, Hydrology, Recreation, Cultural Resources, and Public Involvement Teams. The Mapping and GIS Applications Team will prepare an extensive inventory of existing GIS data sets available from Federal, state, local and non-governmental organizations. The team will gather information about various GIS data sets that relate to hydrology (includes SAST data), ecology (includes HNA), land use, demographics, recreation/tourism, floodplain management (includes levees), transportation infrastructure, utilities infrastructure, hazard, toxic, and radioactive wastes, political and administrative units, and cultural resources. The Mapping and GIS Applications Team will prepare a summary of available GIS data sets. Members of the other study teams will review the summary and select GIS data sets for assembly into a systemic geospatial database.

6.7.2 Assemble a Systemic Geospatial Database

Existing GIS data sets selected by members of other study teams will be assembled and organized into a systemic geospatial database. Additionally, base mapping GIS data sets like orthophotography and topographic maps will be assembled into the systemic geospatial database. The systemic geospatial database will be accessible from the ArcGIS platform.

6.7.3 Prepare Maps and Figures

Maps are important tools for facilitating communication among individuals, agencies, scientists and organizations. The Mapping and GIS Applications Team will provide mapping support for a variety of products and activities including: fact sheets, newsletters, project reports, public workshops, project meetings (including RFG meetings), briefing and display materials, study

brochures, and web site communication and other project activities, e.g., cultural resources mitigation.

6.7.4 Spatial Query/Spatial Analysis

Perhaps the most powerful functionality of GIS technology is its analytical capabilities. Using existing GIS data sets, the Mapping and GIS Applications Team will use the analytical tools of cartography to support the analytical and decision-making work of the Economics, Natural Resources, Hydrology, Recreation, and Cultural Resources teams. GIS will be used to query, measure, describe and summarize geographic information about historical and existing conditions (including demographics, land use, leveed areas, urban infrastructure, transportation infrastructure) within the floodplains of the Upper Mississippi and Illinois Rivers. Additionally, as needed, data sets will be combined (e.g., intersected, clipped, buffered) to evaluate geographic patterns and relationships among geographic phenomenon.

6.7.5 Spatial Visualization

Whether landscapes are visualized from a static (view-shed) perspective) or from a more dynamic (flyover) perspective, the visualization of landscapes, especially with respect to plan formulation, can be a powerful tool. The Mapping and GIS Applications Team will work with interested project participants to develop spatial tools/applications for visualizing floodplain landscapes.

6.7.6 Serve GIS Products from Web Site

To ensure that map products are readily accessible for use by those involved with the project, the Mapping and GIS Applications Team will organize project maps for the Comprehensive Plan into a project atlas on a website. Additionally, the team will develop an ArcIMS internet map service to serve project data and interactive maps.

6.7.7 Contract Oversight for Outsourced GIS Activities

The Mapping and GIS Applications Team will oversee and manage contracts for outsourced GIS activities including: data purchases/acquisitions, database development, geographic analyses, and GIS tool/application development. The Mapping and GIS Applications Team, in cooperation with members of other study teams, will develop scopes of work, manage contracts, and review products for technical merit and contract compliance. The Mapping and GIS Applications Team will ensure that delivered products adhere to Executive Order 12906 and the Army Corps of Engineers ER 1110-1-8156, *Policies, Guidance and Requirements for Geospatial Data and Systems*, especially in regard to the requirements for FGDC (Federal Geographic Data Committee) compliant metadata.

6.8 Cultural Resources and Historic Properties

Cultural resources field investigations will not be conducted for this programmatic level of study. Instead, indices of cultural resource potential will be developed using observed relationships

between floodplain landform sediment assemblage (LSA) units and cultural resources site densities. In order to accomplish this, archeological sites, archeological survey areas, and LSA units need to be compiled and integrated into a seamless digital GIS format for the entire study area.

6.8.1 CEMVP has developed an archeological site GIS database for the navigation zone on the UMR (current as of 1998). CEMVR has developed both archeological site and survey area databases for the UMR (current as of 1995) and the IWW (current as of 1998). Updates to the Illinois, Iowa, and Wisconsin portions of the study area are ongoing as part of another undertaking and shall be integrated into this analysis when complete.

Archeological survey areas need to be digitized and compiled for the Minnesota (CEMVP) portion of the study area; and both site and survey areas require digitizing and compilation in the Missouri (CEMVS) portion of the study area. This task will require review of existing archeological site and survey records and digitizing site and survey locations following standards currently employed by the State of Illinois. Current archeological site and survey data in GIS format is essential for making system-wide and site-specific evaluation of potential impacts.

6.8.2 Geomorphological research has defined and mapped LSA units for the CEMVP and CEMVR districts within the navigation zone of the UMR-IWW portion of the study area. LSA units are discontinuous geologic features that define Late Wisconsinan and Holocene alluvial fills. Each LSA unit has an ordered structure of development with predictable ages that provide the primary context of archeological deposits. LSAs have proven effective in determining the likelihood for near-surface and/or deeply buried archeological sites. The concept has been integrated into historic properties management at the Corps and is critical in evaluating potential system-wide as well as project-specific impacts to historic properties. It is necessary to complete the LSA model by defining and mapping the LSA units for the CEMVS portion of the study area. This work is scheduled to be accomplished next fiscal year as part of a separate undertaking and will be integrated into this study when it has been completed.

6.8.3 A GIS extension is needed to facilitate evaluation of the archeological potential of the study area across state and district boundaries. The tool would be based on similar work completed by the Corps to assess habitat needs on the Mississippi River and similar work presently being conducted for the Illinois Waterway and Rock River basins. The extension would perform multi-directional queries such as location, National Register criteria, LSA, etc. and generate user specified products such as tables, charts, maps, and textual reports.

Much of the GIS data will be compiled from existing data sets and created as part of the tasks discussed above. The bulk of the work will be in the development of the GIS application that will automate theme access, database summary, and the generation of specified products. It is anticipated that the number of themes will not be great and that the development process will be very similar to the Mississippi River habitat needs assessment query tool and, consequently, should result in some efficiencies.

6.9 Real Estate

6.9.1 Real Estate Requirements

The Enhanced Real Estate Section will exceed the requirements set forth ER 405-1-12, paragraph 12-13, thus equating to other sections of the report. All other written real estate memoranda, opinions, reports, and related documentation will be prepared in accordance with guidance contained in the Real Estate Handbook.

6.9.2 Property Ownership Data

The Rock Island District's Real Estate Division will coordinate the gathering of property ownership data for various aspects of the Comprehensive Plan. Data will include: identification of the number and types of ownerships and the various easement estates within the project study areas. Information gathered will then be mapped and/or recorded for future use.

6.9.3 Right of Entry

The Rock Island District's Real Estate Division will coordinate and or obtain the required rights-of-entry for study purposes. Study purposes requiring rights-of-entry include environmental investigations, cultural assessments, core sampling, surveys, exploration, etc. Rights-of-entry document the legal right granted by the landowners for the temporary use of property for a specific purpose and time period.

6.9.4 Real Estate Cost Estimates

The Rock Island District's Real Estate Division will be responsible for the coordination and development of the real estate costs for all alternatives proposed. Real Estate Cost Estimates furnished will meet or exceed the requirements as set forth in ER 405-1-12 (Chapters 4, 5 and 12); related CEMVD and HQUSACE policy guidance will be commensurate with the overall effort for this study. Real Estate Estimates will include estimated costs of all real property rights, fee or easements to be acquired inclusive of improvements and all damages, acquisition costs, costs associated with Public Law 91-646 and other estimated costs related to utilities/facilities relocations identified during the study effort. Estimates will be formatted for M-CACES and the Real Estate Section.

6.9.5 Real Estate Issues

The Real Estate Section will include a discussion of the various estates utilized in the study effort and identify and discuss any adverse impacts to include induced flooding or severance created as a result of a project alternative. Future data requirements to prove or disprove any adverse impacts to real property as a result of project actions will be noted.

6.9.6 Real Estate Analyses

The Enhanced Real Estate Section will include a description of the area; the estimated acreage by estate and land class, estates standard and/or non-standard and if non-standard, need therefor;

identification and discussion of lands or interests therein owned by the Federal Government, local sponsors, or other public entities; listing of Federal projects in the area; identification of any relocations under Public Law 91-646; Real Estate Cost Estimate; identification of local sponsors and local sponsor capabilities with respect to LERRD acquisition; and other relevant information appropriate for the project, such as PCAs requiring modification. The Real Estate Section will be provided to PM-M for incorporation into the project report.

6.9.7 Project Administration

Real Estate representatives from Rock Island, St. Paul or St. Louis Districts will attend meetings and conferences as required and for various purposes during this study effort.

6.10 Summary of Expected Study Products

Primary Products:

- Recommended Systemic, Comprehensive Plan for Flood Damage Reduction and associated environmental sustainability
- UMRCP Report to Congress

Additional Products:

- Multiple systemic maps and digital databases (various themes, scales, etc.)
- SOW for development of systemic Standard Project Flood (SPF) definition(s)
- Enhanced public awareness and understanding of problems, needs, and opportunities associated with flood damage reduction and floodplain management
- Identification, development, and comprehensive evaluation (i.e., economic, engineering, environmental, etc.) of 3 to 5 systemic flood damage reduction and associated environmental sustainability alternative plans
- Updated unit costs and generic quantities for structural and nonstructural flood protection and flood damage reduction, and associated environmental sustainability, floodplain recreation, and other relevant measures
- Systemic NED with EQ and OSE account considerations for flood damage reduction and associated environmental sustainability
- Programmatic EIS for flood damage reduction and associated environmental sustainability
- Investigation of the potential for an existing conditions flood routing plan
- Literature searches, data inventories, and other products fundamental to a study of this extent and complexity

7.0 Project Management Structure and Considerations

Study project management will be accomplished consistent with current Corps of Engineers policies, guidance, and general requirements. This includes: the development of detailed work and organizational breakdown structures, responsibility assignment matrices, and critical path diagram; use of the Corps of Engineers Financial Management System (CEFMS); metrification; establishment of an acquisition plan; application of risk and change management processes; and a comprehensive quality control plan.

7.1 Work Breakdown Structure

The study will be broken down into six main areas. Study Plan (2000 series) deals with all aspects of plan formulation including plan development, review, and approval processing. Technical Studies (3000 series) describes all technical study work to be done by the Corps or via contract. Public Involvement (4000 series) covers public workshops, newsletters, website development and maintenance, and all other activities that support the general dissemination of study status and other study-related information. Team Coordination (5000 series) consists of the Collaboration Team and regional focus group meetings, including preparation of read-ahead materials and all meeting documentation activities. Project Coordination (6000 series) covers management and quality assurance/quality control functions. Approval Process (7000 series) details the preparation of the report and all procedures requisite to study approval processing.

7.2 Organizational Breakdown Structure

The UMRCP study will require extensive and intensive collaboration, coordination, and communications with multiple state and Federal agencies, local units of government, non-governmental organizations, and the general public. The primary governmental and organizational entities expected to be actively engaged in the accomplishment of this study include: the five Upper Mississippi River Basin states of Illinois, Iowa, Minnesota, Missouri, and Wisconsin; FEMA, USEPA, USGS, USFWS, NRCS, USDA; counties adjacent to the rivers and municipalities that lie entirely or partially within the floodplain; and UMIMRA and MRBA. In addition to the continuous participation by these governmental and organizational entities in the study, active involvement by the general public will be pursued via public meetings and workshops as well as other direct and indirect means (e.g., website, newsletters, presentations, etc.).

8.0 Performance Measurement

Measurement of cost and schedule performance is vital to determining work progress. During the project management planning process, a cost and schedule baseline will be established. This PMP establishes the baseline subdivided into products and sub-products so that completion of work can be readily identified. The performance of task completion (earned value) will be measured using PROMIS (Project Management Information System), drawing cost data from the Corps of Engineers Financial Management System (CEFMS) and schedule information from a Network Analysis System (NAS), to include a critical path diagram. The critical path diagram is a schedule that shows the relationship of all study tasks and highlights those most critical to the overall study completion date.

Progress on tasks will be assessed monthly. Significant changes and deviations from the schedule will be reported at the Rock Island District Project Review Board (PRB).

9.0 Acquisition Plan

A number of tasks outlined in this PMP will require acquiring support from outside sources (contractors, other Federal agencies, etc.) to provide assistance and specialized skills necessary. A variety of mechanisms will be utilized to obtain contracts, agreements, and interagency funds transfers.

10.0 Risk Management

Risk will be minimized through the use of the schedules, metrics, and assignment of specific responsibilities. Potential areas of risk include Federal funding levels, timeliness of approvals, contract award and delivery delays, and public perception and expectations issues. Monthly reviews by the study team of contract progress and deliverables will assess potential problems and develop appropriate actions. Limits to the study team's ability to perform include Federal funding levels. Contingencies to manage financial risk have been incorporated in the cost estimates for each item.

11.0 Change Management Process

The study framework will be used to track project performance of the schedule, cost, quality, etc. Significant changes will be reported at the monthly Rock Island District PRB meetings. In addition, any significant changes will be discussed, coordinated, and reviewed as part of the Collaboration Team meetings.

Change requests can be presented in the form of verbal or informal requests. However, as a best practice, proposed changes should be formally recorded in order to facilitate the understanding of the intent of the proposed change. When a threshold is broken in the following categories—scope, schedule, cost, quality and risk—then a Schedule and Cost Change Request (SACCR) form can be used to document the impacts.

| Change Management Thresholds | |
|------------------------------|--|
| Scope | When the defined scope changes direction of the study (major shift, addition or deletion of tasks, etc.) |
| Schedule | When a schedule change affects the overall study completion date to the extent it affects preparation for a particular WRDA or enters an additional FY. |
| Cost | When total cost increase for the project exceeds its estimate by 15 percent. |
| Quality | When the overall quality of a significant study product is in jeopardy. |
| Risk | When any aspect of the study is significantly negatively affected by external factor(s) (e.g., funding delays, approval delays, contract award delays, etc.) |

The SACCR also documents the proposed changes and provides the rationale for approving changes that exceed the project's baseline performance measurement thresholds. SACCRs should be posted to the project in P3e when P3e is implemented. PM will gather sufficient information to analyze the proposal and potential solutions, considering the impact of changes for all of the project's baseline performance measures in order to insure that all changes are coordinated across the entire project. The analysis is distributed to the appropriate decision maker(s), if other than the PM. The RPM will communicate the decision to the Rock Island District PRB for all project changes and those that require that the PMP be re-approved. SACCR formats can be found at the following address, <http://www.hnd.usace.army.mil/p2/tutor/REF8009.htm>. All changes will be tracked in the following table.

| Date: | | Description | Location of Change Request |
|-------|--|-------------|----------------------------|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

12.0 Quality Control Plan (QCP)

Quality control is assured by a multi-discipline, multi-layer, life-cycle approach. Successful planning products are the result of the insights and expertise of a diverse array of professionals, including the active participation of local sponsors and representatives from the pertinent agencies. Work efforts are conducted either by the non-Federal sponsor, A-E contractor(s), other districts, or by in-house technical staff. If the primary technical work is conducted outside the Corps of Engineers, one layer of review will take place by the contractor before any product(s) are transmitted to the district with specific management responsibility for the same and subsequently to the District responsible for management of the contract.

13.0 Closeout Plan

This section was taken from the Project Management Business Process Manual and modified for this type of project (enhanced reconnaissance study; 100% Federal funding). Additional information and references are available at <http://www.hnd.usace.army.mil/p2/>.

| Complete Date | Checklist with Responsibility Assigned (in brackets) |
|---------------|---|
| | 1. Ensure PDT reviews unliquidated obligations and commitments in CEFMS for completed activities (SM) |
| | 2. Clear outstanding obligations and commitments (PDT) |
| | 3. Close work items/reallocate funds, if appropriate (PDT) |
| | 4. Ensure PDT completes all closeout documents including Engineer Form 3013 (e.g., contractor and A-E evaluations, A-E evaluations, and transfer documents), and that they are done in accordance with applicable regulations. (SM) |
| | 5. Complete all closeout documents and request feedback from customer. A standard questionnaire available USACE-wide, or developed by local SOP, will provide measurable feedback from our customers. (PDT) |
| | 6. Summarize Lessons Learned – PROC3020 . (PDT) |
| | 7. If all activity work items are closed, all funds reallocated to project work item, and all claims settled. Project Execution and Control – PROC3000 . (PDT) |
| | 8. Ensure files are maintained. These records include such things as project files, technical documents, reports, plans and specifications, financial documents, etc. (SM) |
| | 9. Conduct an audit if appropriate. |

14.0 Approvals

I certify that this Project Management Plan (PMP) reflects the scope of the project and that I can meet the enclosed schedule and cost tables. I accept the responsibilities outlined in this plan, which reflects U.S. Army Corps of Engineers regulations and requirements and customer expectations.

PMP SUBMITTED BY:

Jerry A. Skalak, CEMVR-PM-M
Regional Project Manager

Date

Dave Leake, CEMVS-PM-F
CEMVS District Project Manager

Date

Dave Raasch, CEMVP-PM-A
CEMVP District Project Manager

Date

REVIEWED BY:

Rich Worthington, CECW-PD
HQUSACE Vertical Team Member

Date

Greg Ruff, CEMVD-MD-PM
CEMVD Vertical Team Member

Date

Dave Gates, CEMVS-PM-F
Environmental Analysis Team Leader

Date

Laura Abney, CEMVR-PM-A
Economic Analysis Team Leader

Date

Dennis Stephens, CEMVS-ED-HE
Hydrology and Hydraulics Team Leader

Date

Franklin E. Star, CEMVP-CO-OP
Recreation Team Leader

Date

| | |
|--|---------------|
| _____ Dawayne Sanders, CEMVS-ED-CE Unit Costs and Quantities Team Leader | _____ Date |
| _____ Rod Hallstrom, CEMVR-RE-A Real Estate Team Leader | _____ Date |
| _____ Jim Ross, CEMVR-PM-A Cultural Resources Team Leader | _____ Date |
| _____ Mary Craig, CEMVR-PM-M Mapping and GIS Applications Team Leader | _____ Date |
| _____ Sue Simmons, CEMVR-PM-A Public Involvement Team Leader | _____ Date |

APPROVED BY:

| | |
|---|---------------|
| _____ Gary L. Loss, P.E. CEMVR Chief, Planning, Programs, & Project Mgmt Division | _____ Date |
| _____ Joseph P. Kellett, P.E. CEMVS Chief, Planning, Programs, & Project Mgmt Division | _____ Date |
| _____ Judith L. A. Des Harnais CEMVP Chief, Planning, Programs, & Project Mgmt Division | _____ Date |

Appendix 1 - UMR Comprehensive Plan
Corps of Engineers Product Delivery Team

31 July 2002

| Name | Office Symbol and Role | Address | Phone | Fax | Internet Address |
|--|---|--|--------------|--------------|--|
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UMR Comprehensive Plan
Corps of Engineers Product Delivery Team (continued)

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UMR Comprehensive Plan
Corps of Engineers Product Delivery Team (continued)

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UMR Comprehensive Plan
Corps of Engineers Product Delivery Team (continued)

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UMR Comprehensive Plan
Corps of Engineers Product Delivery Team (continued)

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Appendix 2

Stakeholder Input

UMIMRA Statement Regarding Minimum Objectives

UMIMRA recommended that the following minimum objectives be established through the UMRCP:

The Comprehensive Plan is intended to complement existing navigation and habitat studies by providing a systemic plan for flood protection and to make recommendations on a coordinated approach to implementing the plan in the Upper Mississippi Valley. We (UMIMRA) recommend that the following objectives be established through the Comprehensive Plan:

Complement Existing Studies by Providing a Systemic Plan for Flood Protection, including:

- Inventory location and causes of bank caving and erosion
- Maintenance and prevention of bank caving and erosion
- Considering scenarios outside the current Principles and Guidelines
- Modeling of standard project flood (ex. ability to convey something greater than 1993)
- Establishing live standards (ex. built to 200-year versus elevation 308 feet)
- Setting minimum protection levels for existing levees
- Using dredged material for multiple beneficial uses

Make Recommendations for a Continuing Authority to Implement a Systemic Plan, including:

- Evaluating benefits on a regional basis
- Compensating for private property losses resulting from structural/nonstructural flood protection measures and implementation of other projects
- Recommending an entity to coordinate implementation of the Plan
- Presenting a structure for continuing authority for construction, operation and maintenance, and periodic plan review and update

Appendix 3

Foundation Documents

| UMRCP Foundation Documents* | | | | |
|--|------------------|----------------------------|---|---|
| Document Title | Publication Date | Primary Author(s) | Primary Focus | Funding Program/Source |
| Ecological Status and Trends of the Upper Mississippi River System 1998 | April 1999 | USGS | LTRMP data and information | UMRS-EMP |
| Science for Floodplain Management Into the 21 st Century, Preliminary Report of the SAST | June 1994 | Interagency team | Post-flood report and scientific evaluation | Executive Office |
| Sharing the Challenge: Floodplain Management into the 21 st Century (aka Galloway Report) | June 1994 | BG Gerald Galloway | Interagency floodplain management review committee findings and recommendations | Executive Office |
| Economic Profile of the Upper Mississippi River Region | March 1999 | Industrial Economics, Inc. | Regional economic activity | USFWS (DOI) |
| UMRS Habitat Needs Assessment | 2000 | Corps of Engineers | Systemic assessment of habitat | UMRS-EMP |
| A River That Works and a Working River | January 2000 | UMRCC | Multi-agency natural resources strategy | UMRCC |
| The Great Flood of 1993 Post-Flood Report - UMR Basin | September 1994 | Corps of Engineers | Post-flood report | Corps |
| UMRS-EMP Report to Congress | December 1997 | Corps of Engineers | Program summary and recommendations | UMRS-EMP |
| A Balanced Management for the Upper Mississippi, Illinois and Missouri Rivers (aka Delft Report) | January 1997 | Delft Hydraulics | Assessment of current management and future options | UMIMRA |
| Floodplain Management Assessment | June 1995 | Corps of Engineers | Post-flood 1993 assessment report | FY 94 Energy and Water Appropriations Act |

* This is not a complete list. It is only a sampling of the previously completed reports, studies, and other documentation upon which the UMRCP will build.